California stem cell scientists comment on the federal funding fracas

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Yesterday's decision by a U.S. Appeals court to allow human embryonic stem cell research to move forward pending a full appeal (see Reuters story) marks a good time to look back at how this legal back and forth impacts the field.

In late August, after the initial injunction halting federal funding for human embryonic stem cell research, CIRM issued a survey to grantees, roughly a quarter of whom reported having NIH funding for their stem cell work (here's our blog entry about that survey). The following are some comments from survey respondants:

- "Interestingly, the early days of molecular biology were also filled with similar religious protests suggesting that scientists were playing god, but those objections were eventually discarded. Since then molecular biology has been so fundamental to medical research that few would admit to ever opposing it. I wonder if many organizations that opponents hESC research were also against molecular biology."
- "I believe that after about 50 years, physicians will recognize the CIRM program above all others as being singularly instrumental in redefining the methodology of treatments and cures."
- "My laboratory does not currently work with hESC but it is a possible future direction. If NIH does not fund this type of work, I will abandon it as a future long term project."
- "CIRM funding for basic research on hESC is now more important than ever. without this the years spent developing this knowhow will be wasted"
- "This ruling is extremely shortsighted. It will not aid the development of adult stem cell therapies and research. It is detrimental to the entire field and will hinder the development of therapies. At present we cannot predict which stem cell approach will work for which disease. Research is needed to establish a comparison base."
- "This illustrates the problem with legislating by executive order, rather than changing the legislation itself. What will stop a new administration from banning hESC research and then another one permitting it again? Financially unstable research environment made worse by yo-yo policy making."
- "I am just devastated, yet trying to be creative and optimistic to generate new funds for my research program and the investigators I am training.
- "This turn of event is a sad day for stem cell researchers in America in particular and for all scientists in general. It will delay our progress in stem cell research and ultimately it is the people who will suffer more."
- "Ironically, I don't disagree with the "legal" decision; I think the judge read congresses directive right. The problem is in the narrow language of the law and in our (scientists) failure to correct the record: "no embryo's were harmed in the generation of these ES lines". Only medical waste blastocysts were harmed. Honestly, saving blastocysts is a non-issue for 90% of the population. We need Obama and congress to re-write the law to allow generation of new ES lines and research on ethically obtained ES lines."
- "For the millionth time, I find myself being thankful for CIRM."

And to the question of what work won't occur due to the funding freeze. Note how many people have concerns about the legal wrangling slowing iPS and adult stem cell research:

- "1. Learning which stem cell type works best for a particular disease.
2. Understanding early human development -- particularly how birth defects, congenital diseases (like autism, degenerative diseases), and cancers arise
3. Aspects of drug discovery
4. Improvements in iPS technology"
- "Basic understanding of the behavior of human ES cells. Many of the current cell lines are not very useful so the ability to make new xeno-free human ES is crucial for future use in clinical trials."
- "This ruling will significantly hamper the development of non embryo derived therapies as well as any cell replacment therapies that may require ES cells."
- "The funding freeze will negatively impact not only the human embryonic stem cell research funding under new guidelines, but will also freeze many research projects that would be fundable under Bush, or even non-stem cell research which is meshed in the same grant with the stem cell research (see additional comments)"
- "It is critical to compare hESCs with iPSCs and aNPC results, and to carefully characterize each. Otherwise, the work on iPSCs and aNPCs may be misleading and even wrong."
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“ "Any new field or biomedical research having enormous potential (e.g. stem cell research) or acute challenges (e.g. HIV / AIDS) requires enormous investment to produce useful return. The sheer breadth and depth of research that is required to convert the potential of stem cell research into reality can only be facilitated by Federal funding. For this to be derailed, even temporarily, on a dubious legal basis that seeks to overturn a previous Presidential order does disservice to the millions of people living with injuries or disease states that could benefit from such research."

“ "Our project was to study the effects of the environmental chemical, BPA, on the early stages of human development, a huge public health issue."

“ "understanding ES biology; and especially understanding how to better develop iPS (in order to rely less on ES in the future)."

“ "All stem cell research will be hindered by banning research on ES cells. ES cells are the quintessential stem cell, the gold standard. We need to study ES cells in parallel with all other types of cells used in regenerative medicine, as they inform one another. Through studies of development (the specialization of embryonic cells) we will learn about regeneration. The two go hand in hand."

“ "Comparative studies between iPSCs and ESCs, which are still sorely needed to understand putative differences between these two sources of stem cells."

“ "To numerous to list all repercussions here, but simply being able to compare ES, to iPS to adult cells and understand what makes them different, what line is best suited for what translational problem is the first big problem that comes to mind. But also all the wasted talent and effort, all those could have beens that will never get started because the atmosphere is simply too toxic."

“ "We could not fully understand stem cell biology.
We could not fully characterize the iPS cells and other reprogramed stem cells because we will have good controls."
We have some information about the different types of stem cells and how the work is tied together in our Stem Cell Basics.

A.A.

Tags: NIH
